

## **ABSTRACT OF THE DISCLOSURE**

[60] The invention concerns a method and an apparatus for investigating layers (1) of tissues in living animals using a microscope (2). The microscope (2) is focused onto a layer (1), and images of the layer (1) are acquired or optical measurements are performed on it. Positional changes of the layer (1) are brought about by movements of the animal or of its organs. The positional changes are sensed, and corresponding signals are generated. The signals are stored, together with the corresponding images or measurement results, for later evaluation; or they are processed in such a way that the positional changes are compensated for in order to investigate the layer (1). As a result, the layer (1) can be qualitatively or quantitatively investigated microscopically, irrespective of the movement of the animal or its organs.